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(12) United States Patent Zhu

(54) SEMICONDUCTOR DEVICES AND METHODS FOR MANUFACTURING THE SAME

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See application file for complete search history.

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(57) ABSTRACT

Semiconductor devices and methods for manufacturing the same are provided. In one embodiment, the method may include: forming a first shielding layer on a substrate, and forming one of source and drain regions with the first shielding layer as a mask; forming a second shielding layer on the substrate, and forming the other of the source and drain regions with the second shielding layer as a mask; removing a portion of the second shielding layer which is next to the other of the source and drain regions; forming a first gate dielectric layer and floating gate layer; forming a mask layer as a spacer on a sidewall of a remaining portion of the second shielding layer, and patterning the floating gate layer with the mask layer as a mask, and then removing the (Continued)

